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of processing vessels with the carrying unit transporting the substrate among the plurality of processing vessels.

**IN THE CLAIMS:**

Please cancel claims 1-10 and add new claims 11-21 as follows:

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11. (New) A method of manufacturing semiconductor devices, comprising the steps of:

- making a first concavity in a first insulating film on a surface of a substrate;
- burying the first concavity covered with a first barrier layer for preventing metal diffusion with a wiring metal;
- polishing the substrate to remove a part of the wiring metal residing higher than the upper peripheral level of the first concavity so as to leave a first metal layer in the first concavity;
- applying a solution of an organic substance tending to be bound to the first metal layer onto the surface of the substrate so as to form a protective film of the organic substance on a surface of the first metal layer for preventing metal diffusion;
- forming on the surface of the substrate a second insulating film directly connected to the first insulating film;
- making a second concavity in the second insulating film in a region above the first metal layer; and
- burying the second concavity covered with a second barrier layer with a second wiring metal layer to be connected to the first metal layer.

12. (New) The method of claim 11, wherein the organic substance is a triazole compound.

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13. (New) The method of claim 11, wherein the organic substance is selected from the group consisting of alicyclic alcohol compounds, saccharides, aromatic ring phenol compounds, aromatic ring carboxylic acid compounds, aliphatic carboxylic acid compounds and derivatives thereof, aminopolycarboxylic acid compounds, phosphoric acid compounds, alkanolamine compounds, aromatic ring amine compounds and aliphatic amine compounds.

14. (New) A method of manufacturing a semiconductor device, comprising the steps of:

making a first concavity in a first insulating film on a surface of a substrate;

burying the first concavity covered with a first barrier layer for preventing metal diffusion with a wiring metal;

polishing the substrate to remove a part of the wiring metal residing higher than an upper peripheral level of the first concavity to leave a first metal layer in the first concavity;

applying a solution of an organic substance tending to be bound to the first metal layer onto the surface of the substrate to form on a surface of the first metal layer a protective film for preventing metal diffusion;

wherein the protection film is stannous chloride, stannous borofluoride, stannous sulfate, nickel sulfate, nickel chloride, or nickel sulfamate;

forming on the surface of the substrate a second insulating film directly connected to the first insulating film;

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forming a second concavity in the second insulating film in a region above the first metal layer; and

burying the second concavity covered with a barrier layer with a second wiring metal layer to be connected to the first metal layer.

15. (New) The method of claim 11, wherein the wiring metal is copper.

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17. (New) The method of claim 11, further comprising washing the polished substrate to eliminate particles therefrom, after polishing the substrate to remove the metal residing higher than the upper peripheral level of the first concavity to leave the first metal layer in the first concavity.

17. (New) An apparatus for manufacturing semiconductor devices, comprising:

a carry-in unit where a substrate cassette receiving a substrate is carried in, the substrate having a metal layer formed in a plurality concavities in an insulating film on the substrates;

a first washing unit where a surface of the substrate is washed;

a processing unit where a solution of an organic substance tending to be bound to the metal layer is applied onto the surface of the substrate to form a protective film on the surface of the metal layer for preventing metal diffusion; and

a carrying unit where the substrate is unloaded from the substrate cassette carried in the carry-in unit, and carried among the units from one to another.

18. (New) The apparatus of claim 17, further comprising:

a second washing unit where the substrate in the processing unit is washed with a washing liquid; and